Book Review


This book is a translated and revised edition of the original Swedish book, Åtfitighet och husdjursförädling, with the chapter on production traits in poultry rewritten by Dr. John C. Bowman of the University of Reading. As the authors point out, this book was not written as a textbook for a particular college course, but was to be a general survey of the genetics of farm animals and the breeding methods for their improvement. They hoped that the book would be used as an introduction to animal genetics by students at agricultural and veterinary colleges, as well as by animal breeders.

As a textbook, this edition should be useful to undergraduates having no previous knowledge of genetics. Chapters have been devoted to the review of basic principles of the physiology of reproduction and the cellular basis of inheritance, Mendelian inheritance (with some biochemical genetics) and population genetics (including some statistical concepts). The book includes chapters on multiple births, the inheritance of external characters, the inheritance of blood characteristics, hereditary defects and disease resistance, sterility and low fertility, milk production traits (udder development, milking rate, milk and fat yield and milk composition), body size and carcass traits, wool production and fur quality, production traits in poultry, breeding methods, estimation of breeding values, selection response and selection methods, and a chapter on special problems in breeding and selection of domestic animals (with a substantial portion devoted to cattle).

For use as a text by graduate students this book is less useful. It is production oriented, with little or no emphasis placed on the theoretical development formulae. The principles of population genetics, with regard to changes in gene frequency, are only briefly derived and explained. Similarly, the equations for Wright's coefficients of inbreeding and relationship are presented but not derived, although examples of their calculation are given. The authors did a good job presenting the concept of heritability as the regression of breeding value on the criterion of selection; but again, no attempt has been made to show derivation of the formulae. To be used in a graduate course this text should be supplemented by a mathematical development.

Since this book was intended as a general survey of the field, an extensive list of references has been omitted—only selected references are included after each chapter. There are no problems for the student to work at the end of the chapter, which lessens the book's usefulness as a text since genetics and animal breeding students should have experience working practical problems. The book appears to be indexed thoroughly and has many graphs, illustrations and photographs from both European and American sources. In general, the book is well organized with a few possible exceptions such as segmented presentations of selection response (introduced on page 133 and expanded on page 436), mass selection (page 398 and again on page 436) and index selection (page 419 and page 438). The high cost of this edition, $17.50, may seem excessive to many students.

M. Grossman
Department of Dairy Science
University of Illinois
Urbana 61801